Chapter One

Introduction

In the area of international trade, industries and workers often complain of unfair foreign trade practices and regularly appeal to the government for protection from imports. Sometimes the President and the Congress have found particular instances of these problems so important that they have dealt with them individually with specific pieces of legislation or agreements. An example of this is the Multifiber Arrangement, which protects the domestic textile and apparel industries from imports. The problems occur frequently enough, however, and in enough industries that the Congress has passed general laws applicable to all industries and occasions. Those laws--referred to as trade remedy laws--specify how the executive branch should handle the problems and what remedies, if any, should be granted to the complaining industries and workers.

How the Antidumping and Countervailing-Duty Laws Fit in with U.S. Trade Remedy Law

The trade remedy laws can be divided into two broad groups--those assisting adjustment to trade and those combating unfair trade practices (see Box 1). The first group consists of laws to assist firms and workers that are adversely affected by increased competition from imports. The central theme of U.S. trade policy is that free trade generally benefits the country as a whole, and permanent barriers to imports are therefore to be avoided. Rather than being protected, domestic industries and workers are normally left to adjust to any increased competition from imports that may arise. Such adjustment is painful, however, and the pain often leads to opposition to the free-trade policies. Consequently, trade adjustment laws were enacted partly from compassion and partly from concern about maintaining support for free-trade policies.

The particular trade remedy law that is most relevant to this study is Section 201 of the Trade Act of 1974, the escape clause.[1] The escape clause authorizes the President to impose temporary import restrictions in cases where a good "is being imported . . . in such increased quantities as to be a substantial cause of serious injury, or the threat thereof" to the domestic industry producing a like or directly competing good. The purpose of the escape clause is to give the domestic industry breathing room in which to adjust to increased competition.[2] In some cases, such as the restraints on motorcycle imports in the 1980s, the domestic industry can use that breathing room to make itself competitive, thereby avoiding (or at least reducing) the need for re-

1. 19 U.S.C. 2251; 88 Stat. 2011, 93 Stat. 193, 98 Stat. 2988, 102 Stat. 1225.

2. That purpose is made clear in the wording of the law in several places. For example, the name of the chapter of the Trade Act of 1974 that contains Section 201 is "Positive Adjustment by Industries Injured by Imports." The name of Section 201 is "Action to Facilitate Positive Adjustment to Import Competition." Further, rather than specify that the President impose quotas, Section 201 specifies that "the President, in accordance with this chapter, shall take all appropriate and feasible action within his power which the President determines will facilitate efforts by the domestic industry to make a positive adjustment to import competition and provide greater economic and social benefit than costs."

Box 1.
U.S. Trade Remedy Laws[1]

Laws Relating to Adjustment by Domestic Industries and Workers to Increased Imports

Sections 201-204 of the Trade Act of 1974, as Amended ("Section 201 Escape Clause"). Authorizes the President to impose temporary import restrictions on a good without regard to the fairness of the imports in cases where the good in question "is being imported . . . in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry" producing a like or directly competing good. The purpose of the escape clause is to give the domestic industry breathing room in which to adjust to increased competition, not to provide for permanent protection.

Section 406 of the Trade Act of 1974. Authorizes the President to impose temporary duties or quotas on imports from communist countries in cases where such imports are causing market disruption--defined as a significant cause of material injury, or threat thereof, to the domestic industry as a result of rapid increase of imports. Similar to Section 201 except that it applies to imports from individual countries rather than all countries, a lower standard of injury exists, and the relief procedure is faster.

Chapters 2, 3, and 5 of Title II of the Trade Act of 1974, as Amended ("Trade Adjustment Assistance"). Provides for various kinds of aid (such as training, trade readjustment allowances, employment services, job-search and relocation allowances, and so forth) for workers and firms adversely affected by increased import competition.

Laws Relating to Trade Considered to Be Unfair

Dumped Imports

The Antidumping Act of 1916. Prohibits the sale of imported goods at prices substantially below the actual market value or wholesale price "with the intent of destroying or injuring an industry in the United States, or of preventing the establishment of an industry in the United States, or of restraining or monopolizing any part of trade and commerce in such articles in the United States." Violations are subject to criminal and civil penalties.

Subtitle B of Title VII (Sections 731-739) of the Tariff Act of 1930, as Amended. Provides for antidumping duties to be imposed on imports sold in the U.S. market at "less than fair value" if such imports cause "material injury" to the U.S. industry producing a like product.

Subsidized Imports

Subtitle A of Title VII (Sections 701-709) of the Tariff Act of 1930, as Added by the Trade Agreements Act of 1979 and as Amended. Applies to imports from countries that have either signed the General Agreement on Tariffs and Trade (GATT) Subsidies Code or assumed obligations substantially equivalent to the code. Provides for countervailing duties to be imposed on imports benefiting from export or domestic subsidies by the source country if the imports cause "material injury" to the U.S. industry producing a like product.

Section 303 of the Tariff Act of 1930, as Amended. Applies to imports from countries that have neither signed the GATT Subsidies code nor assumed obligations substantially equivalent to the code. Provides for countervailing duties to be imposed on imports benefiting from export or domestic subsidies by the source country regardless of whether the imports cause "material injury" to the U.S. industry producing a like product.

Other Trade Practices

Section 337 of the Tariff Act of 1930, as Amended. Authorizes the International Trade Commission, subject to Presidential disapproval, to issue exclusion orders and cease-and-desist orders in cases of: (1) unfair import practices (excluding those involving only dumping or subsidies) and unfair methods of competition that destroy, substantially injure, or prevent the establishment of an industry in the United States, or restrain or monopolize trade and commerce in the United States, or threaten to do any of those; (2) imports that infringe a U.S. patent, registered copyright, registered trademark, or registered mask work of a semiconductor chip product. Most cases involve patent infringement. Others involve group boycotts, price fixing, predatory pricing, false labeling, false advertising, and trademark infringement.

Sections 301-310 of the Trade Act of 1974, as Amended ("Section 301"). Mandates action by the U.S. Trade Representative, subject to direction by the President, in cases where a foreign practice or policy violates an agreement with the United States or is unjustifiable and burdens U.S. commerce. Authorizes such action when a foreign practice or policy is unreasonable or discriminatory and burdens U.S. commerce. Actions include imposition of duties or other import restrictions, suspension or withdrawal of concessions made in trade agreements, and agreements with the offending country to eliminate the practice or policy or to eliminate the burden on U.S. commerce.

1. This box is abstracted from House Committee on Ways and Means, *Overview and Compilation of U.S. Trade Statutes,* WMCP:103-1 (1993), pp. 53-131.

deploying or writing off capital and for workers to find new jobs in other industries.[3] More often, the protection slows down the required contraction of an industry that is no longer competitive and indeed cannot be made competitive.[4]

Slowing down the required contraction reduces adjustment costs in several ways. It allows more of the needed adjustment to occur through depreciation of nonredeployable capital rather than write-offs and through attrition of surplus workers rather than layoffs. By reducing the amount of unemployment at any given time, it makes it less difficult for those who are laid off to find jobs. It may also save firms from bankruptcy, allowing them to contract rather than go out of business completely.

The law has several provisions to make sure that the protection it authorizes is used to ease adjustment costs and not to eliminate the need for adjustment by providing permanent protection. First, it places a limit on how long the restrictions can last--no more than eight years. Second, it provides an opportunity for the domestic industry to submit adjustment plans to the Administration and instructs the President to consider those adjustment plans in deciding whether to grant protection. Third, the standard of "substantial cause of serious injury" ensures that protection is granted only in cases where adjustment costs are significant. The President is charged with considering the national economic and security interests when deciding whether to grant protection--that is, he is charged with balancing the harm protection might bring to consumers and other industries with the potential benefit to the industry and workers seeking the protection.

Although the escape clause lowers adjustment costs, it does not eliminate them. To further ameliorate the remaining costs, a second law in this group provides for Trade Adjustment Assistance, which consists of various kinds of aid, such as training, trade readjustment allowances, employment services, and job-search and relocation allowances, for workers in industries adversely affected by increased import competition.

3. For a discussion of the improved plight of Harley-Davidson after the temporary imposition of special tariffs in the 1980s, see Gary Slutsker, "Hog Wild," *Fortune*, July 12, 1993, pp. 45-46.

4. See Congressional Budget Office, *Has Trade Protection Revitalized Domestic Industries?* (November 1986), pp. xii-xiii.

The second group of trade remedy laws consists of what are often referred to as unfair trade laws. Those laws prohibit or deter foreign trade practices that U.S. policy deems unfair, or they neutralize the effects of such practices. This group includes the antidumping (AD) and countervailing-duty (CVD) laws that are the subject of this study.

Although the United States has two antidumping laws, the Antidumping Act of 1916 is seldom used.[5] Almost all cases are brought under Subtitle B of Title VII (Sections 731-739) of the Tariff Act of 1930, as amended.[6] Subtitle B provides for imposing added duties on imports sold at prices that are "less than fair value" if those imports result in "material injury" to a domestic U.S. industry. The duties equal the amount by which the import price falls below "fair value." Determining what constitutes fair value is somewhat complicated and will be discussed in more detail in chapters 3 and 4. In most cases, however, fair value is approximately equal to the cost of producing the good or to the price of the good in the home market of the firm that exported it to the United States, whichever is greater. "Material injury" means "harm which is not inconsequential, immaterial, or unimportant."[7] Almost any harm that is not negligible is considered to constitute "material injury."

There are two countervailing-duty laws: Subtitle A of Title VII (Sections 701-709) of the Tariff Act of 1930, as amended, and Section 303 of the Tariff Act of 1930, as amended.[8] Both laws provide for imposing an added duty--called a countervailing duty--on imports that a foreign government has subsidized. The duty equals the amount of the subsidy.

Subtitle A of Title VII applies to imports from countries that have signed, or assumed obligations substantially equivalent to, the General Agreement on Tariffs and Trade (GATT) "Agreement on Subsidies and Countervailing Measures," often referred to as the

5. 15 U.S.C. 71, 39 Stat. 798.

6. 19 U.S.C. 1673; 93 Stat. 162, 98 Stat. 3024, 100 Stat. 2921, 102 Stat. 3806.

7. 19 U.S.C. 1677(7)(A), 93 Stat. 178.

8. Subtitle A of Title VII is 19 U.S.C. 1671; 93 Stat. 151, 97 Stat. 1266, 98 Stat. 3024, 100 Stat. 2921, 102 Stat. 1185, 3807. Section 303 is 19 U.S.C. 1303; 46 Stat. 687, 88 Stat. 2049, 93 Stat. 10, 190, 193.

GATT Subsidies Code. In keeping with the requirements of the Subsidies Code, this law provides for countervailing duties only in cases where subsidized imports are causing material injury to the domestic industry producing a like product. Section 303 applies to imports from countries that have neither signed the GATT Subsidies Code nor assumed substantially equivalent obligations. It provides for countervailing duties on all subsidized imports regardless of whether they are causing such material injury.

Since U.S. policy deems dumped and subsidized imports to be unfair, no presumption exists that domestic industries and workers should have to adjust to them. Thus, no fixed time limits for the antidumping and countervailing duties are specified in Title VII of the Tariff Act of 1930. The duties can go on as long as the dumping or subsidies continue. The law does not provide for the domestic industry to submit adjustment plans or for the President to consider such plans. The standard for injury is lower than that in escape-clause cases--unfair imports need only cause "material injury" rather than be a "substantial cause of serious injury"--and there is no provision for the President to consider the national economic interest. Duties are mandatory once it has been determined that imports are dumped or subsidized and are causing material injury to a U.S. industry.

Why This Study?

The United States has historically argued that dumping and subsidization of imports are unfair and objectionable and that they are significant problems. But most other countries do not agree (notwithstanding the provisions in the GATT that allow for AD/CVD laws). Only the United States, Canada, Australia, and the European Community made substantial use of antidumping laws in the 1980s, and the United States was by far the largest user of countervailing-duty laws. Other countries have begun to follow the U.S. lead in imposing antidumping duties, but in many cases they have imposed them on products of U.S. firms in retaliation for U.S. use of antidumping duties against their own firms.

In the last several GATT rounds, the United States has sought stiffer limits on dumping and subsidies, more freedom to expand the coverage of the laws against them, and, as a result of the increased use of antidumping laws against U.S. firms, greater openness and transparency in how other countries administer their AD/CVD laws. Except for greater openness and transparency, other countries have frequently fought the U.S. position. They have tried to rein in U.S. AD/CVD law and practices.

In the Uruguay Round, the U.S. objectives for AD/CVD provisions were to protect current U.S. laws, increase the transparency and due process of other countries' AD/CVD administration, and expand the powers of countries to move aggressively against firms with histories of dumping many products and against various methods of circumventing AD/CVD orders. The United States was almost alone, however, in trying to expand coverage. The final agreement increases transparency and due process, but it does not expand coverage. Moreover, it imposes only modest restraints on U.S. AD/CVD policies.

This study examines the AD/CVD laws in the United States, their history, their economic effects, and how they currently operate. Its purpose is to shed light on the disputes over them and to inform the debate about the Uruguay Round agreement.

Chapter Two

Predatory Pricing, Price Discrimination, Selling Below Cost, and Government Subsidization

The antidumping and countervailing-duty laws connect U.S. trade policy with U.S. antitrust and industrial policies as they relate to predatory pricing, price discrimination, selling below cost, and government subsidies. To understand the implications of these laws and the changes that have occurred in them over the years, it is necessary to know when and why these economic actions occur and how they affect economic welfare.

Predatory Pricing

Predatory pricing is the practice of selling a good or service at a loss in order to drive competitors out of the market and thereby increase the market power of the predator firm, allowing the firm subsequently to raise prices above the levels that prevailed before the predatory pricing began.

When and Why Firms Engage in Predatory Pricing

Firms engage in predatory pricing in hopes of using the resulting increased market power to raise prices and thereby increase their profits. The practice seldom occurs because the conditions that make it possible and profitable seldom exist. In most cases, any attempt at predatory pricing would either fail or end up costing a firm more money than it would gain back later. (See Appendix A for a discussion of the economic theory and evidence relating to this issue).

One would expect predatory pricing to be even more infrequent in international trade than in domestic commerce because the relevant market is the world market rather than a national one. Suppose a Japanese firm were to attempt predatory pricing of its exports to the United States and succeed in eliminating all other firms in the U.S. market while large German firms still had sizable markets in Germany and other countries. Under such a scenario, the potential competition of those German firms in the U.S. market would limit the Japanese firm's ability to raise prices. To succeed with predatory pricing on a world scale--that is, to eliminate competition in all major markets--would require an extremely large firm with an extremely large share of the world market, which is not likely to happen in many cases.

Effects of Predatory Pricing on Economic Welfare

On the infrequent occasions when predatory pricing does occur and succeed, it has a pernicious effect on the economy because it leads to the formation of monopolies. Monopolies reduce the productivity and efficiency of the economy in at least two ways. First, in order to increase prices, they reduce output and sales below what would occur in a competitive market. Normally, a competitive market produces and sells the optimal amount of a good--enough, but no more than enough, to

cover all uses for which the benefit exceeds the cost of production. Thus, forming a monopoly normally results in a reduction of output and sales to suboptimal levels.

Second, lack of competition leads to inefficiency within firms. Often the only measure of a firm's efficiency is its ability to make a profit. If the firm loses money because competitors profitably sell good products at lower prices, the firm is not efficient. Further, the losses force the firm to become more efficient even if the required changes are not in the personal interest of the firm's managers. If the managers resist change, the firm will go broke. With monopolies, no competition exists, so these mechanisms cannot possibly work.

Monopolies also have implications for social equity. They enrich the owners and workers of the monopoly at the expense of the consumer. Whether that is good or bad depends on the relative value one places on the welfare of consumers of the good in question and the welfare of the owners and workers of the monopoly. In the case of monopolies formed by foreign exporters engaging in predatory pricing in the U.S. market, however, the consumers who are hurt are U.S. citizens, whereas the owners of the monopoly who gain are foreign citizens. Hence, the United States clearly loses.

Price Discrimination

Price discrimination is the practice of charging different prices to different customers for the same product, when the varying prices do not merely reflect differences in the cost of providing the product (such as varying transportation costs, quantity discounts, and the like). Usually the discrimination occurs among broad groups of customers (or markets) that differ in some key characteristic such as geographic location, age, wealth, or urgency of demand for the product.

When and Why Firms Engage in Price Discrimination

Price discrimination allows firms to sell products at high prices to customers that are willing to pay them without at the same time losing sales to customers unwilling to pay them. It thereby raises profits, which is why firms engage in it. Price discrimination can occur only when trade between the markets is difficult or impossible. If trade were not difficult or impossible, customers in the lower-price market would purchase the product and sell it to customers in the higher-price market at prices somewhere between the lower and higher prices, thereby making a profit and preventing the would-be price discriminator from making any sales at the higher price.

Price discrimination falls into three categories based on the motive behind the discrimination. The first category, unintentional discrimination, may be illustrated by a case in which a firm has markets in two different countries, and its product spoils rapidly with age. The firm intends to charge the same price in both markets, but after it produces and ships the product, demand falls off unexpectedly in one of the markets. To sell all of the product that has been shipped before it spoils, the firm must lower its price in that market. It does not lower the price in the other market, however, since demand there has not fallen off. Transportation costs and time prevent shipping the product from the market with excess supply to the other market to take advantage of the higher price there. That kind of discrimination clearly involves no malevolent intent on the part of the discriminator, and one would not expect it to recur frequently.

The second category is intentional price discrimination to support predatory pricing. A firm attempting predatory pricing can reduce its initial losses by restricting its predatory prices to the market of the targeted firms while maintaining its normal higher prices elsewhere. Since predatory pricing does not occur frequently, neither does the price discrimination in this category.

The third category, other intentional discrimination, occurs by far the most often. It takes place whenever three conditions hold. The first is that the firm in question has significant market power in at least one of the markets so that it will lose only some--but not all--of its customers if it raises its price slightly. Such market power is common. It may occur because the firm is a monopoly. More often it results from a firm's having significant market share in an industry in which products vary slightly from firm to firm. (For example, a Ford is different from a Chevrolet. If Ford raised its

prices, it would lose some of its customers to Chevrolet, but not all of them.) The difference in the products might be merely one of location. Thus, a drug store could raise its prices slightly without losing all of its customers to a competing store a few miles away because of the time and gas required to drive to the other store.

The second condition is that the firm has more market power in one market than in the other--again, a very common situation. In general, the market power of a firm increases with its share of the market, and a firm seldom has the same share in different markets. Furthermore, differences in culture, taste, wealth, and other factors lead customers in different markets to value products differently. For example, the Japanese have a greater taste for rice than do Americans and thus would probably be willing to pay more for it rather than accept some substitute such as potatoes. Many of the elderly have tight budgets, and many are retired and have time on their hands to shop for a good price. Therefore, the elderly on average are unwilling to pay as much for a product as other people are.

The third condition is the existence of barriers that prevent customers in the lower-price market from selling the product to customers in the higher-price market. Where barriers exist and the other conditions hold, a firm will charge a higher, more monopolistic price in the market in which it has greater market power, and a lower, less monopolistic price in the other.

Barriers preventing trade between different markets are not unusual. They are particularly common in the service sector, and consequently so is price discrimination. For example, medical services cannot be resold. Therefore, before Medicare and Medicaid, price discrimination appeared in the form of lower doctors' fees to the elderly and the poor. The viewing of motion pictures cannot be resold, which has allowed theaters to charge higher prices for adults' tickets than for children's tickets.

Although such barriers are less common in the goods sector, they are not uncommon. For example, prescription drugs cannot be resold from one customer to another, allowing price discrimination to appear in the form of senior citizens' discounts.

Transportation costs and government-imposed trade barriers can hinder trade between customers in different geographic markets, allowing firms to charge different prices in different locations. Such geographic price discrimination within the United States is limited because of the efficient, low-cost transportation system and the lack of trade barriers imposed by state and local governments. Nevertheless, some examples stand out. Restaurants, food concession stands, and stores in airports and sports arenas are notorious for charging high prices, even when they are parts of chain restaurants or stores that charge lower prices elsewhere.

One would expect geographic discrimination to be much more common on an international scale. There are numerous barriers to trade between countries: transportation costs, transportation time, tariffs, quotas, laws against gray-market imports, and different product standards. Moreover, cultural differences between countries are substantial, and the market shares of firms vary from country to country.

Of particular interest for this study, one would expect international price discrimination often to be of the type that is called "dumping." Usually, firms have greater market share in their home market than in their export markets. Hence, they have greater market power at home and therefore charge higher prices there. That is one kind of dumping.

Effects of Price Discrimination on Economic Welfare

The effect of domestic price discrimination on economic efficiency and output is not the same every time. In some cases, efficiency and output are increased, in others they are decreased, and in still others they are unaffected. The effects on particular economic groups, however, are consistent from case to case. Price discrimination increases the profits of the firm engaging in it at the expense of customers in the higher-price market. Those customers lose from price discrimination. The customers in the lower-price market gain because they receive a lower price than they otherwise would. They do not normally, however, receive a lower price than they would in a competitive market. Discrimina-

tion generally results from a firm's charging a more monopolistic price in the higher-price market and a more competitive price in the lower-price market. In almost all cases, both prices are at least as high as the normal competitive market price. (An exception is provided by cases with substantial economies of scale, where the price in the lower-price market can sometimes be below average total cost, but not below the marginal cost of producing the goods for the lower-price market).

In the international context--that is, where a firm charges different prices in different countries--three cases are possible. In the first, a firm exports from its home country to two other countries and charges different prices in the two export markets. Assume, for simplicity, that the home-country price of the exporting firm is not affected by whether the firm is allowed to discriminate in pricing. In that case, the exporting country and the country receiving the lower price both gain, and the country receiving the higher price loses. In the country receiving the lower price, the customers gain and the competing firms lose. Moreover, the total gain to the consumers is greater than the aggregate loss to the competing firms.

In the second case, the exporting firm is in the same country as the lower-price market. The importing country has the higher-price market. In that case, the exporting country clearly gains from price discrimination, since both its customers and its exporting firm gain from it. The importing country clearly loses, since its customers pay a higher price for the imports.

In the third case, the exporting firm is in the same country as the higher-price market. The importing country has the lower-price market. In that case, the net effect on the exporting country is unclear. The country's exporting firm gains, but its consuming citizens and firms must pay higher prices. It is unclear whether the gain to the exporting firm or the loss to the consumers is larger.

The importing country definitely gains from the price discrimination, since its customers pay lower prices for the imports than they would without price discrimination. The firms that compete with the imports are hurt by the price discrimination because it results in an increase in imports and a lower price. The loss to those firms, however, is normally smaller than the gain to the customers.

The third case is known as dumping. If the United States was the importing country in that case, its antidumping law would impose added duties on the imports in question. Further, if the United States was the lower-price importing country in the first case and the exporting firm had few sales in its home market, the U.S. antidumping law would impose added duties on imports in that case also. Thus, U.S. antidumping law imposes added duties on imports in both cases where price discrimination by the foreign exporter benefits the United States economically. Yet it does not impose added duties when price discrimination harms the United States economically.

Selling Below Cost

Selling below cost means selling a good or service at a price lower than the average total cost of production per unit of output. Depending on the situation, the average total cost may or may not include a reasonable rate of return on capital, which would show up in a firm's income statement as profit.

When and Why Firms Sell Below Cost

Many people think that selling below cost is somewhat nefarious. Since firms are in business to make a profit, the thinking goes, they could not possibly sell below cost intentionally unless they were engaging in predatory pricing. In fact, however, selling below cost is common and seldom has anything to do with predatory pricing. Some of the reasons for it follow.

Recessions and Mispredicted Demand. During recessions, demand for some industries' products can fall substantially below output capacity. In that case, the price often drops below the average total cost for each firm, and thus all firms lose money if they continue to sell their products. Normally, to maximize profits in such situations, a firm continues to sell its product as long as the price remains above average variable cost. By so doing, the firm earns enough revenue to cover the cost of staying open and at least a little of the fixed costs (such as mortgage or other interest payments) that it must pay regardless of whether it remains open or not. Thus, the firm loses less money than it would if it quit selling altogether.

Introduction of New Products. Firms often lose money when new products are introduced. An extreme example is provided by General Motors' Saturn cars, which were still unprofitable several years after they were introduced. New products often do not sell in large quantities until substantial amounts have been spent on advertising and consumers have had time to learn about the products and their quality. Moreover, a steep learning curve is likely to occur when the product is introduced as the firm learns how to produce, advertise, distribute, and sell the product most efficiently. If the firm is competing with products of other firms that are already established, it cannot charge a price high enough to cover its initial high costs at the low initial rates of sale without losing its customers to the competitors.

Loss Leaders. Retail stores frequently advertise individual products for sale at extremely low prices as a means of getting people to come to the store. These products are often called "loss leaders." Although the advertised sales are unprofitable, the store owners expect that many of the people lured into the store will see and buy other products at profitable prices.

In effect, loss leaders are a form of indirect advertising, and the losses on them are essentially an advertising cost. Directly advertising to everyone every product a store sells is expensive and inefficient: not everyone is in the market for the store's products. The people who come into the store for the advertised loss leaders, however, by self-selection are people interested in purchasing either those or similar, more profitable products. Therefore, loss leaders may be more cost-effective than widespread direct advertising to the public.

Life-Cycle Pricing. Sales below cost sometimes occur in the early parts of product life cycles in industries with steep learning curves. For example, in the semiconductor industry, the average cost of producing a given chip usually falls substantially over time as the firm learns through production experience how to increase yields (the fraction of produced chips that are not defective) and otherwise increase the efficiency of production. In such industries, a company may find it worthwhile to price a new chip below the initial average cost at the time of its introduction but higher than the cost averaged over the entire life cycle of the chip. The resulting initial losses are effectively part of the cost of developing the technology to produce the chip. The cost will be recouped when learning-by-doing reduces the cost below the price.

Life-cycle pricing can speed up the pace at which production costs decline and new products are introduced and accepted into the economy. If a firm had to charge prices above production costs on new products for which learning-by-doing is an important part of production technology, initial prices in some cases could be so high as to discourage sales. The resulting low production levels would lengthen the time it takes a firm to learn how to reduce its costs and improve the quality of its product. Thus, consumers would continue to pay higher prices than if the firm had increased production and reduced costs more rapidly.

Legal Constraints. Sometimes legal constraints force firms to sell below cost. For example, in recent years U.S. automobile firms have continued to make subcompact cars even though these cars are usually unprofitable for U.S. firms. The possibility that the new Chrysler Neon subcompact car will prove an exception and actually be profitable has generated considerable attention. One might wonder why U.S. firms continue making these cars if they are unprofitable. Some have argued that at least part of the reason is that the cars help the firms meet the legally imposed corporate average fuel economy standards.

Laws restricting layoffs of workers provide another example. In many cases under U.S. law, a firm must provide a minimum period of advance notice before it can close a plant and permanently lay off its workers. Most likely a firm would not decide to close a plant unless it was losing money. The plant would probably continue to lose money during the legal minimum period between the advance notice and the final closing and layoffs, which means that sales of its products would be below cost.

How Selling Below Cost Affects Economic Welfare

Other than the infrequent cases of predatory pricing, the instances of selling below cost that occur in a free market generally benefit both parties to the transaction. Clearly, consumers benefit from low prices, and firms would certainly not sell below cost if doing so did not provide some benefit to them.

Although both of the parties to the below-cost sales that occur in a free market generally benefit, firms that compete with the seller of below-cost sales may lose sales of their own and thereby be hurt. U.S. policy, however, has generally not recognized this harm as sufficient reason to prohibit below-cost sales by domestic firms in the domestic market. There are good reasons for such a policy. One is that, even though it would help the competitors to the firm selling below cost, such a prohibition would usually hurt consumers and the firm even more.

Another reason is that such a prohibition would defeat one of the major advantages of a free market over a command economy. In order to make good decisions, a command economy requires a vast government bureaucracy with prodigious knowledge of the costs of firms. Because no one person or even a reasonably small group of people can possibly obtain all of that information and process it efficiently and accurately to make good decisions, command economies do not work well. Free markets eliminate the need for such a bureaucracy with such vast knowledge. Left to their own devices, most firms will sell most products at prices that cover total costs most of the time. Those firms that do not will go bankrupt and disappear. Trying to enforce a law requiring that prices cover total costs for all goods all of the time would reinstitute the need for a bureaucracy with vast, unobtainable knowledge.

The reasoning changes slightly in the case of a foreign firm selling below cost in the U.S. market. In that case, the U.S. cost-benefit calculation includes only the consumer, who benefits from the sale, and the competitor firms, which lose. The firm making the sale is not part of the calculation if one is concerned solely with the U.S. self-interest. Nevertheless, the gain to the consumer alone would normally be larger than the loss to the domestic competitor firms.

For a given level of production and sales, a drop in price as a result of competition from below-cost sales by foreign firms will initially help U.S. consumers to the same degree that it hurts competing U.S. producers. Production and sales do not remain the same, however. Responding to the lower price, consumers purchase more of the product and therefore gain more. Also in response to the lower price, competing U.S. producers reduce their sales in order to cut their losses. Thus, the end result is that U.S. consumers gain more than competing U.S. producers lose.

Below-cost sales by a foreign firm in a third-country market could have negative effects on U.S. competitor firms that normally sell in that market. Moreover, those negative effects might not be offset by gains to U.S. consumers (since U.S. consumers do not purchase in third-country markets) or by indirect gains to other U.S. exporters or import-competing firms. Furthermore, U.S. law would not cover such cases, since no sales occur in the United States. Those cases would require a general policy in the General Agreement on Tariffs and Trade requiring all countries to prohibit below-cost imports.

The GATT has no such policy, nor would it be consistent for the United States to favor such a policy while at the same time maintaining its current policy of allowing domestic firms to sell below cost in interstate and intrastate trade. The United States would benefit from such a GATT policy in some cases in which its exporting firms no longer had to compete with below-cost sales by foreign firms in foreign markets. In other cases, however, such as those in which U.S. firms wish to make below-cost sales and those in which U.S. consumers or consuming firms could no longer benefit from below-cost sales by foreign firms, such a policy would harm the United States.

Summing up the costs and benefits, the United States probably would not fare differently from the rest of the world under such a policy. Further, the cost-benefit ratio to the world would be roughly the same as the cost-benefit ratio to the United States for a policy of prohibiting below-cost sales in interstate and intrastate trade. Hence, the cost-benefit ratio to the United States of such a GATT policy would be roughly the same as the cost-benefit ratio to the United States of a policy of prohibiting below-cost sales in interstate and intrastate trade. Therefore, consideration of net economic effects argues for taking the same position on both policies.

Government Subsidies

Government subsidies are difficult to define because they can have so many forms and objectives. Gener-

ally, though, they are grants of some kind made by a government to reduce the price or cost of something below the normal market price or cost--or, in some cases, below what the price or cost should be (whatever that is). The grants may take many forms, such as financial payments, tax abatements, in-kind goods or services, below-market rates on loans, and below-market prices on government-provided goods and services.

Sometimes it is a matter of opinion whether the government is providing a subsidy. The airplane manufacturing industry provides a good example in international trade. The U.S. military paid for substantial amounts of research and development (R&D) in that industry. If the results of the R&D could be used only in military aircraft, that funding would represent government funding of defense, not a subsidy. The European Union (EU) argues, however, that some of the results can also be used in commercial airliners. If so, the cost of the part of the R&D that has both military and civilian uses should be allocated partially to the Department of Defense and partially to the civilian airliner divisions of the aircraft companies. The costs allocated to the civilian divisions should be recovered in the prices of the airliners they sell.

Disagreement between the United States and the EU over what part of the total military payment to airplane manufacturers might be considered a commercial subsidy and over the related question of how much the EU should be allowed to subsidize its own industry to compete with the U.S. industry has developed into a major dispute.

When and Why Governments Subsidize

Governments subsidize for many reasons--including to promote scientific research and development, prevent layoffs or otherwise promote full employment, maintain or increase the tax base, help firms comply with pollution control requirements, promote regional development, keep firms that are considered essential to the national security from going bankrupt, and advance social equity.

All countries subsidize to some degree. In the United States, state and local governments frequently provide tax abatements and other subsidies to encourage firms to locate manufacturing plants or corporate headquarters in their jurisdictions (witness the competition among these governments for the General Motors Saturn plant). Most states also provide free education from kindergarten through grade 12 and subsidize colleges and universities. The federal government funds substantial amounts of research at many colleges and universities. It subsidizes the provision of electricity by the Tennessee Valley Authority and various other hydroelectric power authorities. It gives subsidies to research on technology for producing semiconductors. The space program is largely a research and development program funded almost entirely by the federal government. Moreover, the Clinton Administration recently proposed subsidizing research into electric cars.

Effects of Subsidization on Economic Welfare

To understand the effects of subsidies on economic welfare, consider first the case where the subsidy is granted by the same country that purchases the subsidized good or service and then how the situation changes when another country grants the subsidy.

When the Subsidy Is Granted by the Same Country That Purchases the Output. In most (but not all) cases, subsidies have a net detrimental effect on economic efficiency and output, partly because they distort market prices and partly because financing them requires taxes that also distort market prices.

In a well-functioning competitive market with no government intervention, the prices that prevail tend to reflect both the costs of producing the respective goods and the values that consumers place on them. As a result, the costs of production and consumer valuations are equated, which promotes maximum efficiency and productivity. Economists have formalized that proposition in a rigorously proven theorem--sometimes called the Fundamental Welfare Theorem--that states that under certain conditions that generally correspond with those of a well-functioning competitive market, a free market without government interventions will produce the most efficient and productive outcome possible.

The theorem provides a road map for determining when subsidies can be designed to improve overall economic efficiency and productivity and when they can

only be detrimental. In cases closely approximating the conditions of the theorem, subsidies will generally harm economic welfare because they distort prices so that prices no longer equate consumer value with the cost of production. They may increase output in the subsidized industry, but that in turn causes the industry to use more inputs than it would otherwise. The resulting decline in the output of other industries, which would be deprived of those inputs, would be greater in value than the increase in the output of the subsidized industry. Subsidies can help, but only when they promote a noneconomic goal--such as social equity or national security--that is deemed more important than the decline in aggregate output, or when the conditions of the Fundamental Welfare Theorem do not closely approximate reality, which usually means that well-functioning competitive markets do not exist.

Basic scientific research is an example of the last situation. One of the conditions required for the theorem is that the benefits of the product in question be confinable to the firm producing it. The product of firms doing scientific research is knowledge, which in many cases is difficult or impossible for the research firm that produces it to keep secret from competing firms. In the case of applied product research, patents are granted to help confine the benefits of the knowledge to the firm (or person) developing it. The patents enable the firm to sell the knowledge or the benefits of it (which might be products produced using the knowledge) and thereby be remunerated for producing it.

In basic research, however, patents are generally inadequate or infeasible because the knowledge gained cannot be kept from others. As a result, the people and firms that do basic research receive insufficient remuneration to give them an incentive to do as much of it as would be optimal for society. Hence, subsidies of basic research can improve economic welfare, and many countries have opted to grant such subsidies.

Even in cases where the conditions of the Fundamental Welfare Theorem are not a good approximation, subsidies can be detrimental. Subsidies ultimately require taxes to finance them, and taxes create their own distortions that reduce economic efficiency and productivity. Moreover, it is frequently impossible to know in a given case whether subsidies would be beneficial to the economy as a whole and, if so, how large they should be.

Subsidies and International Trade. The cost-benefit calculus changes when the country purchasing the subsidized good is not the same country as the one granting the subsidy. There are two possible cases: general subsidies equally available to all industries, and specific subsidies available only to (or preferentially available to) individual industries or groups of industries.

Unlikely as it may seem, general subsidies equally available to all industries in proportion to the value of their output have no effect on trade. Such subsidies decrease the prices of all products by the same percentage. If the exchange rate were to stay constant, the decrease in prices would lead foreign countries to purchase more of the products. The exchange rate does not stay the same, however. Increased foreign purchases require increased foreign holdings of the subsidizing country's currency with which to make the purchases. When a foreign country attempts to purchase that currency, it drives up the currency's price (the exchange rate), exactly offsetting the reduction in the prices of the goods caused by the subsidy. As a result, the foreign-currency prices of the goods are the same with the subsidy as without it, and consequently the subsidy has no effect on trade.[1]

Subsidies restricted to or given preferentially to particular industries do affect trade. The exchange rate adjusts enough to offset some average of the price decreases made by all industries. The prices in subsidized industries decrease more than the average, however, so that the exchange rate adjustment does not completely offset them. Further, the prices in unsubsidized industries do not decrease at all, so they are more than offset.

Countries granting specific subsidies on goods that are exported are almost always harmed. Such subsidies result in the country giving away the good for less than it costs to produce. From the perspective of a nonsubsidizing country, the analysis is exactly the same as that for sales below cost. Thus, if a country imports subsidized products, its domestic firms that compete with the imports are harmed, but its consumers generally benefit more than the firms are harmed. Hence, the economy benefits from the subsidized imports. In the case of subsidized sales to third countries, the nonsubsidizing

1. In the case of a fixed-exchange-rate system rather than the floating-rate system that the United States maintains, a different mechanism causes the same result.

country can be harmed because its exporting firms lose sales (or make them at lower prices) to the third-country market, but its consumers do not benefit. Moreover, the subsidizing country is also harmed in those cases, which is different from what happens with sales below cost.

The aircraft industry again provides an example. One study ran simulations indicating that European subsidies to Airbus Industries for the A300 aircraft (which competes with the Boeing 767) may harm both Europe and the United States.[2] The United States is harmed because the competition from Airbus reduces what would otherwise be monopoly profits of the Boeing Company. Boeing's reduced profits are not completely offset by the gains to U.S. purchasers of aircraft since many of the A300 aircraft are sold abroad.

The harm to Europe is less certain. The subsidies are a loss to Europeans, but the reduced market price of aircraft benefits European purchasers of aircraft, who would otherwise have to pay monopoly prices to Boeing. The simulations in the study indicate that the cost of the subsidy may be larger than the gain to European purchasers of aircraft, though this result is not certain.

Although the subsidizing country almost always loses economically from subsidizing its exports (or their production), there are exceptions. In the 1980s, a body of economic literature emerged known as "strategic trade theory."[3] According to that literature, in some cases in which industries have economies of scale or positive externalities (which, of course, violate the conditions of the Fundamental Welfare Theorem), it is theoretically possible for a country to gain from subsidizing the industry or from protecting it with tariffs or quotas.[4] The empirical literature to date, which has focused mainly on economies of scale, indicates that the gain from such subsidies and trade barriers is usually small, that determining which industries will yield such gains is difficult, and that the losses from nonoptimal tariffs and subsidies relative to free trade are likely to be significant.

2. Richard Baldwin and Paul Krugman, "Industrial Policy and International Competition in Wide-Bodied Jet Aircraft," in Robert E. Baldwin, ed., *Trade Policy Issues and Empirical Analysis* (Chicago: University of Chicago Press, 1988), pp. 45-71.

3. Two good collections of writings in this literature are Paul R. Krugman, ed., *Strategic Trade Policy and the New International Economics* (Cambridge, Mass.: MIT Press, 1988), and Paul Krugman and Alasdair Smith, eds., *Empirical Studies of Strategic Trade Policy* (Chicago: University of Chicago Press, 1994).

4. Externalities refers to divergences between the cost of production to an industry and the cost to society. A negative externality exists when the cost to society is greater than the cost to the industry. An example of a negative externality is pollution. The cost of production for an industry is the cost of raw materials, land, and labor. The cost to society is the cost of the materials, land, and labor that the industry uses plus the unpleasantness and damage caused by pollution. There can also be positive externalities when the cost to an industry is greater than the cost to society.